

## PATENT ABSTRACTS OF JAPAN

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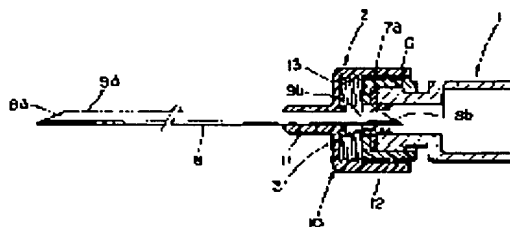
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## (54) SYRINGE ALSO SERVING AS MEDICAL FLUID VESSEL

## (57)Abstract:

PURPOSE: To reliably prevent a foreign matter from being mixed in a medical fluid in a cartridge at installing time by forming a piercing needle part in a length enough to pierce a sealing member in a position to start screw-fitting between a part to be screw-fitted of a needle base and a screw-fitting part.

CONSTITUTION: In this syringe also serving as a medical fluid vessel, a large diameter part 12 of a needle base 10 is out-fitted on a cap 6, and when a male screw 7a on the cap 6 side is screwed in a female screw 13 on the large diameter part 12 side, an injection needle 2 is firmly installed in a cartridge 1. When screw-fitting between the female screw 13 and the male screw 7a is started, since a piercing needle part 9b pierces rubber packing 3, rotation of the injection needle 2 or the cartridge 1 is performed after a cutting edge 8b is inserted in the cartridge 1. Thereby, shaving-off of the rubber packing 3 by the cutting edge 8b so far can be excellently avoided, and a foreign matter can be reliably prevented from being mixed in a medical fluid in the cartridge 1.



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**CLAIMS**

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[Claim(s)]

[Claim 1] The tubed cartridge which sealed the front end side by the seal member, respectively with the plug in which a plunger rod and connection of a back end side inside are free, and filled up the interior with the drug solution, The screwing section prepared in the front end section of this cartridge, By [ which cut, and pierces and \*\*\*\* said seal member with a cutting edge ] having considered as the prickle needle penetration section in which it considers as the reusable puncture needle section by which the puncture of the end section is carried out to the body etc., and the other end \*\*\*\* said seal member, and having been formed at the tip of this prickle needle penetration section It has the hypodermic needle equipped with the needle machine which has the screwed section thrust into the needle tube which the drug solution in said cartridge opens for free passage, and said screwing section, and was attached in the pars intermedia of this needle tube. By rotating said cartridge or said hypodermic needle, and thrusting the screwed section of said needle machine into said screwing section Said prickle needle penetration section is a drug solution container combination syringe characterized by being formed in the die length which \*\*\*\* said seal member in the location where screwing with the screwed section of said needle machine and said screwing section is started in the syringe of the drug solution container combination which equipped this cartridge with this hypodermic needle.

[Claim 2] Said needle machine is equipped with the cylinder part extrapolated by the front end periphery section of said cartridge. A female screw is formed in the inner skin of this cylinder part, and consider as said section screwed on, and the male screw corresponding to said female screw is formed in the front end periphery section of said cartridge, and it considers as said screwing section. And the drug solution container combination syringe according to claim 1 further characterized by arranging the end cutting edge of said prickle needle penetration section in said cylinder part.

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DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to the drug solution container combination syringe which makes as a syringe the drug solution container with which it filled up with the drug solution for injection beforehand serve a double purpose.

[0002]

[Description of the Prior Art] Conventionally, what is shown in drawing 3 is known as this kind of a drug solution container combination syringe. These drug solution container combination syringes are the seal members a, such as rubber and synthetic resin, about a front end side, and are equipped with the hypodermic needle d with which the front end section of Cartridge c and this cartridge c which sealed the back end side inside with Plug b, respectively, and filled up the interior with the drug solution is equipped.

[0003] A hypodermic needle d is equipped with the needle tube g made into the prickle needle penetration section f in which it considers as the reusable puncture needle section e by which the puncture of the end section is carried out to the body etc., and the other end \*\*\*\* the seal member a, and the needle machine h is attached in the pars intermedia of this needle tube g. By [ which pierce and \*\*\*\* the seal member a with a cutting edge i ] having been formed at the tip of the prickle needle penetration section f at the time of wearing, it cuts and the drug solution in Cartridge c is open for free passage in a needle tube g. From the back end side of Cartridge c, the drug solution in Cartridge c is poured into the body etc. by connecting the plunger rod j with Plug b, carrying out the puncture of the reusable puncture needle section e to the body etc., and pushing in Plug b with this plunger rod j.

[0004] By the way, wearing of the hypodermic needle d to Cartridge c is made by attaching the needle machine h of a hypodermic needle d outside the lure taper section k prepared in the front end section of this cartridge c, and \*\*\*\*(ing) the seal member a in the prickle needle penetration section f. However, only by connection by fitting of such a needle machine h and the lure taper section k, since Cartridge c and the hypodermic needle d are not being fixed, there is insecurity. For this reason, as shown in drawing 4 in recent years, while attaching the needle machine h of a hypodermic needle d outside the lure taper section k, what connected Cartridge c with the hypodermic needle d firmly is proposed by thrusting the rim n (screwed section) formed in the female screw section m (screwing section) prepared along with the periphery section of this lure taper section k at the needle machine h.

[0005] However, it sets to this drug solution container combination syringe. Since the prickle needle penetration section f of a hypodermic needle d deals with it and it is comparatively short from the upper reason, In the location where the bell and spigot of the needle machine rim n to the female screw section m is started, the end cutting edge i of the prickle needle penetration section f does not reach the seal member a. Therefore, it will be run through while the end cutting edge i of the prickle needle penetration section f will shave off the seal member a like \*\*5\*\* , if a bell and spigot is performed in this condition and a hypodermic needle d or Cartridge c rotates. There was a possibility that the shaved-off fragment might mix in the drug solution in Cartridge c as a foreign matter, and might be poured into the body etc.

[0006] Moreover, the actuation is troublesome, in order to have to remove this cap in case a wrap cap etc. is needed in this, it becomes cost quantity and Cartridge c is further equipped with a hypodermic needle d since the prickle needle penetration section f has projected from the needle machine h.

[0007]

[Problem(s) to be Solved by the Invention] This invention is made in order to cancel this unarranging, and it aims at offering the drug solution container combination syringe which can prevent certainly that a foreign matter mixes in the drug solution in a cartridge at the time of wearing.

[0008] Moreover, this invention aims at offering the drug solution container combination syringe which can prevent certainly insurance and that a foreign matter mixes to the drug solution in a cartridge at the time of wearing while being able to equip a cartridge with a hypodermic needle sanitarily.

[0009]

[Means for Solving the Problem] The tubed cartridge which is a seal member about a front end side, sealed the back end side inside with the plunger rod and the plug which can be connected, respectively, and filled up the interior with the drug solution in order that this invention might attain this purpose, The screwing section prepared in the front end section of this cartridge, By [ which cut, and pierces and \*\*\*\* said seal member with a cutting edge ] having considered as the prickle needle penetration section in which it considers as the reusable puncture needle section by which the puncture of the end section is carried out to the body etc., and the other end \*\*\*\* said seal member, and having been formed at the tip of this prickle needle penetration section It has the hypodermic needle equipped with the needle machine which has the screwed section thrust into the needle tube which the drug solution in said cartridge opens for free passage, and said screwing section, and was attached in this needle tube. By rotating said cartridge or said hypodermic needle, and thrusting the screwed section of said needle machine into said screwing section In the syringe of the drug solution container combination which equipped this cartridge with this hypodermic needle, said prickle needle penetration section is characterized by being formed in the die length which \*\*\*\* said seal member in the location where screwing with the screwed section of said needle machine and said screwing section is started.

[0010] In this case, said needle machine is equipped with the cylinder part extrapolated by the front end periphery section of said cartridge, a female screw is formed in the inner skin of this cylinder part, and it is made into said section screwed on, and the male screw corresponding to said female screw is formed in the front end periphery section of said cartridge, it is made into said screwing section, and it is desirable that the end cutting edge of said prickle needle penetration section is further arranged in said cylinder part.

[0011]

[Function] Since the prickle needle penetration section is formed in the die length which \*\*\*\* a seal member in the location where screwing with the screwed section of a needle machine and the screwing section by the side of a cartridge is started according to this invention, where said end cutting edge is inserted into a cartridge on the occasion of bell-and-spigot initiation, a hypodermic needle or a cartridge rotates, therefore shaving picking of a seal member with said end cutting edge is avoided good.

[0012] In this case, if it has the cylinder part extrapolated by the front end periphery section of a cartridge, and the female screw formed in the inner skin of this cylinder part is made into said section screwed on, and a needle machine forms the male screw corresponding to said female screw in the front end periphery section of said cartridge and considers as said screwing section While the end cutting edge of the prickle needle penetration section can be arranged in said cylinder part, therefore a wrap cap etc. becomes unnecessary about the prickle needle penetration section, it is prevented good that face the handling of a hypodermic needle and a finger etc. touches the prickle needle penetration section.

[0013]

[Example] Hereafter, one example of this invention is explained with reference to drawing 1 and

drawing 2 . The explanatory sectional view in the decomposition condition of a drug solution container combination syringe that drawing 1 is an example of operation of this invention, and drawing 2 are the explanatory sectional views for explaining the actuation which equips a cartridge with a hypodermic needle.

[0014] As the fundamental configuration, this drug solution container combination syringe is equipped with the hypodermic needle 2 with which the front end section (left end section) of the cartridge 1 of the shape of a cylinder with which the interior is filled up, and this cartridge 1 is equipped with a drug solution, as shown in drawing 1 .

[0015] The thing made from hard glass is used for the cartridge 1 for shock-proof reservation and good preservation of a drug solution, the front end section (left end section) is rubber packing 3, and the back end section inside is sealed with the gasket 4, respectively. Sliding of the inside of a cartridge 1 of a gasket 4 is enabled, and it is connected free [ attachment and detachment of the plunger rod 5 ] from a back end side. The drug solution in a cartridge 1 is poured into the body etc. from a hypodermic needle 2 by pushing in a gasket 4 with this plunger rod 5.

[0016] The cap 6 of the shape of a short cylinder which fixes rubber packing 3 to the front end of a cartridge 1 is attached outside the front end section of a cartridge 1. This cap 6 is fabricated using a metal or synthetic resin, such as stainless steel, etc., and male screw 7a is formed in the periphery section. On the other hand, the flange 7 for fingerplates fabricated using synthetic resin, such as polypropylene, is attached outside the back end section of a cartridge 1. Thus, by considering as the flange 7 for fingerplates made of synthetic resin, a larger flange can be obtained easily, at the time of injection, it is stabilized and a syringe can be held.

[0017] A hypodermic needle 2 is equipped with the needle tube 8 formed by the super-thin stainless steel pipe. The respectively sharp end cutting edges 8a and 8b are formed in the both ends of a needle tube 8, and it is referred to as reusable puncture needle section 9a in which the end cutting-edge 8a side carries out a puncture to the body etc., and is referred to as prickle needle penetration section 9b into which the end cutting-edge 8b side thrusts rubber packing 3. When rubber packing 3 is pierced by end cutting-edge 8b and prickle needle penetration section 9b \*\*\*\*, the drug solution of one in a cartridge is open for free passage in a needle tube 8. The approximately cylindrical needle machine 10 is attached in the back end section periphery of a needle tube 8.

[0018] As for the needle machine 10, the major diameter 12 by which the narrow diameter portion 11 by which outside attachment immobilization is carried out is extrapolated by said cap 6 at the back end section is formed in the needle tube 8 at the front end section, respectively. From the back end section of a major diameter 12, end cutting-edge 8 of prickle needle penetration section 9b b is located in the method of inside, and is arranged in this major diameter 12.

[0019] The female screw 13 screwed in male screw 7a of said cap 6 is formed in the front end side inner skin of a major diameter 12 corresponding to this male screw 7a. Here, in the location where a major diameter 12 is extrapolated on cap 6, and screwing with said male screw 7a is started, as shown in drawing 2 , this female screw 13 is formed so that it may become the die length to which prickle needle penetration section 9b \*\*\*\* rubber packing 3.

[0020] In the drug solution container combination syringe of this configuration, a cartridge 1 is firmly equipped with a hypodermic needle 2 by extrapolating the major diameter 12 of the needle machine 10 on cap 6, and thrusting the female screw 13 by the side of a major diameter 12 into male screw 7a by the side of cap 6. And since prickle needle penetration section 9b has run through with rubber packing 3 as mentioned above in case screwing with a female screw 13 and male screw 7a is started, rotation of a hypodermic needle 2 or a cartridge 1 is performed after end cutting-edge 8b is inserted into a cartridge 1. Therefore, it cuts like before, shaving picking of the rubber packing 3 by cutting-edge 8b is avoided good, and it can prevent certainly that a foreign matter mixes in the drug solution in a cartridge 1.

[0021] Moreover, since end cutting-edge 8 of prickle needle penetration section 9b b is arranged in the major diameter 12 of the needle machine 10 at the time of wearing In order that a wrap cap etc. may become unnecessary about prickle needle penetration section 9b like before, and

cost reduction can be planned and a finger etc. may not touch prickle needle penetration section 9b at the time of wearing, contamination of a needle tube 8 etc. is prevented good, and it can consider as insurance and a sanitary syringe.

[0022]

[Effect of the Invention] Since shaving picking of a seal member with the end cutting edge of the prickle needle penetration section is avoidable good according to this invention so that clearly from the above-mentioned explanation, it can prevent certainly that a foreign matter mixes in the drug solution in a cartridge.

[0023] Moreover, a needle machine is equipped with the cylinder part extrapolated by the front end periphery section of a cartridge. When the female screw formed in the inner skin of this cylinder part was made into the section screwed on, the male screw corresponding to said female screw is formed in the front end periphery section of a cartridge and this is made into the screwing section Since the end cutting edge of said prickle needle penetration section can be arranged in said cylinder part, while a wrap cap etc. becomes unnecessary about the prickle needle penetration section and being able to plan cost reduction On the occasion of wearing of a hypodermic needle, contamination of a needle tube is prevented good, and insurance and a sanitary drug solution container combination syringe can be offered.

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**DESCRIPTION OF DRAWINGS**

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[Brief Description of the Drawings]

[Drawing 1] It is the explanatory sectional view of the decomposition condition of the drug solution container combination syringe which is an example of operation of this invention.

[Drawing 2] It is the explanatory sectional view of \*\* explaining the actuation which equips a cartridge with a hypodermic needle.

[Drawing 3] It is the explanatory sectional view of the decomposition condition of the conventional drug solution container combination syringe.

[Drawing 4] It is the explanatory sectional view of the decomposition condition of the conventional drug solution container combination syringe.

[Drawing 5] An end cutting edge is the explanatory view of \*\* explaining signs that a seal member is shaved off.

[Description of Notations]

1 [ -- A gasket, 5 / -- A plunger rod, 7a / -- A male screw, 8 / -- A needle tube, 8b / -- An end cutting edge, 9a / -- The reusable puncture needle section, 9b / -- The prickle needle penetration section, 10 / -- A needle machine, 12 / -- A major diameter, 13 / -- Female screw ] -- A cartridge, 2 -- A hypodermic needle, 3 -- Rubber packing, 4

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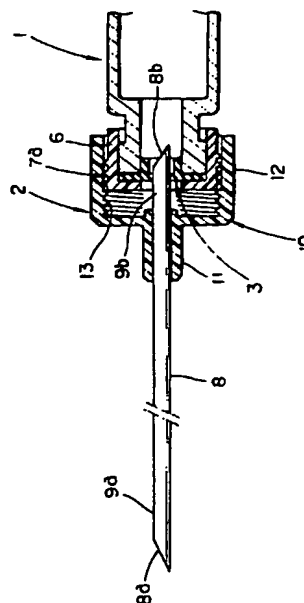
(54) 【発明の名称】 薬液容器兼用注射器

(57) 【要約】

【目的】 カートリッジ内の薬液に異物が混入するのを確実に防止する。

【構成】 刺通針部9bを、針基10の雌ねじ13とキャップ6の雄ねじ7aとの螺合が開始される位置でゴムパッキン3を刺通する長さに形成する。

FIG. 2



## 【特許請求の範囲】

【請求項1】 前端側を密封部材で、後端側内面をプランジャーロッドと連結自在の栓でそれぞれ密封して薬液を内部に充填した筒状のカートリッジと、

該カートリッジの前端部に設けられた螺合部と、一端部が人体等に穿刺される穿刺針部とされ他端部が前記密封部材を刺通する刺通針部とされて該刺通針部の先端に形成された切り刃で前記密封部材を突き刺して刺通することにより前記カートリッジ内の薬液が連通する針管及び前記螺合部にねじ込まれる被螺合部を有して該針管の中間部に取り付けられた針基を備えた注射針とを備え、

前記カートリッジ又は前記注射針を回転させて前記針基の被螺合部を前記螺合部にねじ込むことにより、該カートリッジに該注射針を装着するようにした薬液容器兼用の注射器において、

前記刺通針部は、前記針基の被螺合部と前記螺合部との螺合が開始される位置で前記密封部材を刺通する長さに形成されていることを特徴とする薬液容器兼用注射器。

【請求項2】 前記針基は、前記カートリッジの前端外周部に外挿される筒部を備え、該筒部の内周面には雌ねじが形成されて前記被螺合部とされ、前記カートリッジの前端外周部には前記雌ねじに対応する雄ねじが設けられて前記螺合部とされ、そしてさらに、前記筒部内に前記刺通針部の切り刃が配置されていることを特徴とする請求項1記載の薬液容器兼用注射器。

## 【発明の詳細な説明】

## 【0001】

【産業上の利用分野】 本発明は、注射用の薬液が予め充填された薬液容器を注射器として兼用する薬液容器兼用注射器に関する。

## 【0002】

【従来の技術】 従来、この種の薬液容器兼用注射器としては、図3に示すものが知られている。かかる薬液容器兼用注射器は、前端側をゴムや合成樹脂等の密封部材aで、後端側内面を栓bでそれぞれ密封して内部に薬液を充填したカートリッジcと該カートリッジcの前端部に装着される注射針dとを備える。

【0003】 注射針dは、一端部が人体等に穿刺される穿刺針部eとされ他端部が密封部材aを刺通する刺通針部fとされた針管gを備え、該針管gの中間部には針基hが取り付けられている。装着時に刺通針部fの先端に形成された切り刃iで密封部材aを突き刺して刺通することによりカートリッジc内の薬液が針管g内と連通する。カートリッジcの後端側からは栓bにプランジャーロッドjが連結されるようになっており、穿刺針部eを人体等に穿刺して該プランジャーロッドjで栓bを押し込むことによりカートリッジc内の薬液が人体等に注入される。

【0004】 ところで、カートリッジcへの注射針dの

装着は、該カートリッジcの前端部に設けられたルーアー部kに注射針dの針基hを外嵌して刺通針部fで密封部材aを刺通することによりなされる。ところが、このような針基hとルーアー部kとの嵌合による接続のみでは、カートリッジcと注射針dとが固定されていないので不安感がある。このため、近年、図4に示すように、ルーアー部kに注射針dの針基hを外嵌するとともに、該ルーアー部kの外周部に沿って設けられた雌ねじ部m（螺合部）に針基hに形成されたリムn（被螺合部）をねじ込むことにより注射針dとカートリッジcとを強固に接続したものが提案されている。

【0005】 しかしながら、かかる薬液容器兼用注射器においては、注射針dの刺通針部fが取扱い上の理由から比較的短くなっているため、雌ねじ部mへの針基リムnのねじ込みが開始される位置において刺通針部fの切り刃iが密封部材aに達しておらず、従って、この状態でねじ込みが行われて注射針d又はカートリッジcが回転されると図5示のように刺通針部fの切り刃iが密封部材aを削り取りながら刺通されてしまい、その削り取られた破片が異物としてカートリッジc内の薬液に混入して人体等に注入される虞れがあった。

【0006】 また、刺通針部fが針基hから突出しているため、これを覆うキャップ等が必要となってコスト高となり、さらに、カートリッジcに注射針dを装着する際には、該キャップを取り外さなければならないため、その動作が面倒である。

## 【0007】

【発明が解決しようとする課題】 本発明はかかる不都合を解消するためになされたものであり、装着時にカートリッジ内の薬液に異物が混入するのを確実に防止することができる薬液容器兼用注射器を提供することを目的とする。

【0008】 また、本発明は、安全かつ衛生的に注射針をカートリッジに装着することができるとともに、装着時にカートリッジ内の薬液に異物が混入するのを確実に防止することができる薬液容器兼用注射器を提供することを目的とする。

## 【0009】

【課題を解決するための手段】 本発明は、かかる目的を達成するために、前端側を密封部材で、後端側内面をプランジャーロッドと連結自在の栓でそれぞれ密封して薬液を内部に充填した筒状のカートリッジと、該カートリッジの前端部に設けられた螺合部と、一端部が人体等に穿刺される穿刺針部とされ他端部が前記密封部材を刺通する刺通針部とされて該刺通針部の先端に形成された切り刃で前記密封部材を突き刺して刺通することにより前記カートリッジ内の薬液が連通する針管及び前記螺合部にねじ込まれる被螺合部を有して該針管に取り付けられた針基を備えた注射針とを備え、前記カートリッジ又は前記注射針を回転させて前記針基の被螺合部を前記螺合

部にねじ込むことにより、該カートリッジに該注射針を装着するようにした薬液容器兼用の注射器において、前記刺通針部は、前記針基の被螺合部と前記螺合部との螺合が開始される位置で前記密封部材を刺通する長さに形成されていることを特徴とするものである。

【0010】この場合、前記針基は、前記カートリッジの前端外周部に外挿される筒部を備え、該筒部の内周面には雌ねじが形成されて前記被螺着部とされ、前記カートリッジの前端外周部には前記雌ねじに対応する雄ねじが設けられて前記螺合部とされ、そしてさらに、前記筒部内に前記刺通針部の切り刃が配置されていることが好ましい。

【0011】

【作用】本発明によれば、刺通針部が、針基の被螺合部とカートリッジ側の螺合部との螺合が開始される位置で密封部材を刺通する長さに形成されているので、ねじ込み開始の際には前記切り刃がカートリッジ内に挿入された状態で注射針若しくはカートリッジが回転され、従って、前記切り刃による密封部材の削り取りが良好に回避される。

【0012】この場合、針基がカートリッジの前端外周部に外挿される筒部を備えて、該筒部の内周面に形成された雌ねじを前記被螺着部とし、前記カートリッジの前端外周部に前記雌ねじに対応する雄ねじを設けて前記螺合部とすると、前記筒部内に刺通針部の切り刃を配置することができ、従って、刺通針部を覆うキャップ等が不要となるとともに、注射針の取扱いを際して刺通針部に指等が触れるのが良好に防止される。

【0013】

【実施例】以下、本発明の一実施例を図1及び図2を参照して説明する。図1は本発明の実施の一例である薬液容器兼用注射器の分解状態の説明的断面図、図2はカートリッジに注射針を装着する動作を説明するための説明的断面図である。

【0014】かかる薬液容器兼用注射器は、その基本的構成として、図1に示すように、薬液が内部に充填される円筒状のカートリッジ1と、該カートリッジ1の前端部（左端部）に装着される注射針2とを備える。

【0015】カートリッジ1は、耐衝撃性の確保及び薬液の良好な保存のために硬質ガラス製のものを用いており、その前端部（左端部）がゴムパッキン3で、後端部内面がガスケット4でそれぞれ密封されている。ガスケット4はカートリッジ1内を摺動可能とされて後端側からプランジャーロッド5が着脱自在に連結される。該プランジャーロッド5でガスケット4を押し込むことによりカートリッジ1内の薬液が注射針2から人体等に注入される。

【0016】カートリッジ1の前端部には、ゴムパッキン3をカートリッジ1の前端に固定する短円筒状のキャップ6が外嵌されている。該キャップ6は、ステンレス

鋼等の金属又は合成樹脂等を用いて成形されたものであり、その外周部には雄ねじ7aが形成されている。一方、カートリッジ1の後端部には、ポリプロピレン等の合成樹脂を用いて成形された指掛け用フランジ部7が外嵌されている。このように合成樹脂製の指掛け用フランジ部7とすることによって、大きめのフランジ部を簡単に得ることができ、注射時において注射器を安定して保持することができる。

【0017】注射針2は、極細のステンレス鋼管で形成された針管8を備える。針管8の両端部にはそれぞれ鋭利な切り刃8a、8bが形成されており、切り刃8a側が人体等に穿刺する穿刺針部9aとされ、切り刃8b側がゴムパッキン3を突き刺す刺通針部9bとされる。切り刃8bでゴムパッキン3を突き刺して刺通針部9bが刺通することによってカートリッジ内1の薬液が針管8内に連通する。針管8の後端部外周には略円筒状の針基10が取り付けられている。

【0018】針基10は、前端部に針管8に外嵌固定される小径部11が、後端部に前記キャップ6に外挿される大径部12がそれぞれ形成されている。刺通針部9bの切り刃8bは、大径部12の後端部より内方に位置して該大径部12内に配置されている。

【0019】大径部12の前端側内周面には、前記キャップ6の雄ねじ7aに螺合される雌ねじ13が該雄ねじ7aに対応して形成されている。ここで、該雌ねじ13は、図2に示すように、大径部12をキャップ6に外挿して前記雄ねじ7aとの螺合が開始される位置において、刺通針部9bがゴムパッキン3を刺通する長さになるように形成される。

【0020】かかる構成の薬液容器兼用注射器においては、針基10の大径部12をキャップ6に外挿して、大径部12側の雌ねじ13をキャップ6側の雄ねじ7aにねじ込むことによって、注射針2がカートリッジ1に強固に装着される。そして、雌ねじ13と雄ねじ7aとの螺合が開始される際には、上述したように、刺通針部9bがゴムパッキン3を刺通しているため、注射針2若しくはカートリッジ1の回転は切り刃8bがカートリッジ1内に挿入された後に行われる。従って、従来のように切り刃8bによるゴムパッキン3の削り取りが良好に回避され、カートリッジ1内の薬液に異物が混入するのを確実に防止することができる。

【0021】また、装着時においては、刺通針部9bの切り刃8bが針基10の大径部12内に配置されているので、従来のように刺通針部9bを覆うキャップ等が不要となつてコスト低減を図ることができ、また装着時においても刺通針部9bに指等が触れることがないため針管8の汚染等が良好に防止され、安全かつ衛生的な注射器とすることができる。

【0022】

【発明の効果】上記の説明から明らかなように、本発明

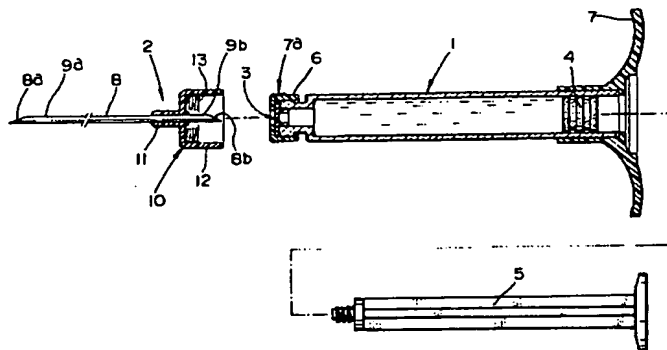
によれば、刺通針部の切り刃による密封部材の削り取りを良好に回避することができるので、カートリッジ内の薬液に異物が混入するのを確実に防止することができる。

【0023】また、針基がカートリッジの前端外周部に外挿される筒部を備えて、該筒部の内周面に形成された雌ねじを被螺着部とし、カートリッジの前端外周部に前記雌ねじに対応する雄ねじを設けてこれを螺合部とした場合には、前記筒部内に前記刺通針部の切り刃を配置することができるので、刺通針部を覆うキャップ等が不要となつてコスト低減を図ることができるとともに、注射針の装着に際して針管の汚染が良好に防止されて安全かつ衛生的な薬液容器兼用注射器を提供することができる。

【図面の簡単な説明】

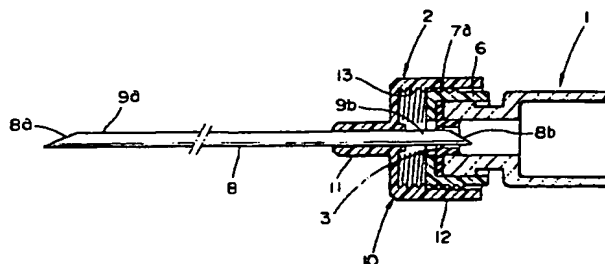
【図1】

FIG. 1



【図2】

FIG. 2



【図1】本発明の実施の一例である薬液容器兼用注射器の分解状態の説明的断面図である。

【図2】注射針をカートリッジに装着する動作を説明するための説明的断面図である。

【図3】従来の薬液容器兼用注射器の分解状態の説明的断面図である。

【図4】従来の薬液容器兼用注射器の分解状態の説明的断面図である。

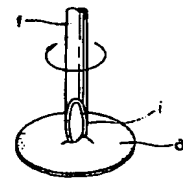
【図5】切り刃が密封部材を削り取る様子を説明するための説明図である。

【符号の説明】

1…カートリッジ、2…注射針、3…ゴムパッキン、4…ガスケット、5…プランジャーロッド、7a…雄ねじ、8…針管、8b…切り刃、9a…穿刺針部、9b…刺通針部、10…針基、12…大径部、13…雌ねじ

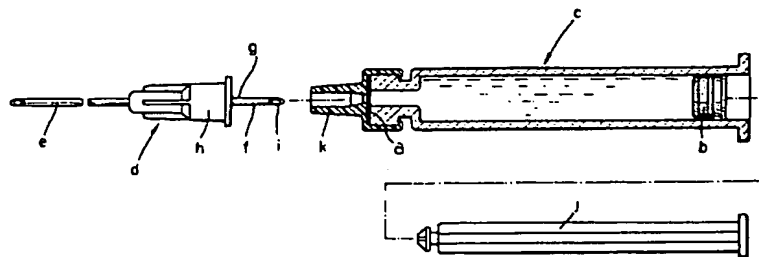
【図5】

FIG. 5



【図3】

FIG. 3



【図4】

FIG. 4

